

In The Claims:

1. A battery separator comprising:

a microporous polyolefinic membrane having a porosity in a range of 30 - 80%, an average pore size in a range of 0.02 - 2.0 microns, and being made from a blend of a polyolefin polymer, and an oligomer of a polyolefinic polymer.

2. A battery separator comprising

a microporous polyolefinic membrane having a porosity in a range of 30 - 80%, an average pore size in a range of 0.02 - 2.0 microns, and being made from a blend of a C₁ - C₇ based polymer and a C₁ - C₇ based oligomer.

3. The separator according to Claims 1 or 2 wherein said separator having a shutdown temperature less than the melting temperature of said polymer.

4. The separator according to Claims 1 or 2 wherein said separator having a thickness less than 3 mils.

5. The separator according to Claims 1 or 2 wherein said membrane being one layer of a multilayered separator.

6. The separator according to Claims 1 or 2 wherein said blend having 50% or less by weight of oligomer.

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7. The separator according to Claims 1 or 2 wherein said polymer being a polyethylene.

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8. The separator according to Claims 1 or 2 wherein said oligomer being a polyethylene wax having a molecular weight less than 6000.

9. A battery separator for a lithium rechargeable battery comprising a microporous polyolefinic membrane having a shutdown temperature of less than about 130°C, a porosity in a range of 30 - 80%, an average pore size in a range of 0.02 - 2.0 microns, and being made from a blend of a high density polyethylene polymer and a polyethylene wax having a molecular weight less than 6000.

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10. A battery comprising:
an anode;
a cathode;
a separator according to Claims 1 or 2, said separator being disposed between said anode and said cathode; and
an electrolyte in ionic communication with said anode and said cathode via said separator.

11. The battery according to Claim 10 being a lithium battery.

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